

Table 1

**Fly primers for qRT-PCR**

Name of gene	5' sequence	3' sequence	Accession no.
SCP1	5' atgggcgaactatacagtgctgc 3'	5' ctgtctgctgctggtcaacatgg 3'	<u>CG5830</u>
GAPDH	5' atcaacgacaacttcgagatcgctg 3'	5' gcggttgagtagcgaactcggtg 3'	<u>CG12055</u>
ribosomal protein S35	5' atgtcgctcttgcaaaaactaagc 3'	5' ttataggatacttcgatttcggc 3'	<u>CG5497</u>
beta-actin	5' tgaagatctcaccgagcgcggtta 3'	5' gaccggactcgtcactactcctgctg 3'	<u>NM_079486</u>
Na Channel II	5' cagctgggtcgggagtagcgcttcc 3'	5' tgcgcagctcgcccatgtagacctg 3'	<u>CG9071</u>
synapsin	5' gagctgctggtgagctttggcg 3'	5' cgctggtgattggggaagaaggtc 3'	<u>CG3985</u>
cholineAcetylTransferase	5' actgggcctattactactggctc 3'	5' ccgtaaaaccgcgcgcatataagt 3'	<u>CG32848</u>
ELAV	5' caacgaagccgagcgagccatccag 3'	5' tggcatggtcacgaatccgaatc 3'	<u>CG4396</u>
beta-tubulin	5' gcaacaactgggccaagggtcattac 3'	5' ctggcatcgaacatctgctgggtcag 3'	<u>CG9277</u>
Neurofilament H	5' gcctccaagagcacgactacaaag 3'	5' cgatcagaagtggatcgcggtcctta 3'	<u>CG7421</u>
peptidyl-glycine oxygenase	5' ctgcgaat caagtacctt gtgctgc 3'	5' ccctggctgaagcagaactcatg 3'	<u>CG3832</u>
myosin-light-chain-kinase	5' ctgcgctgcacctcagaaacgac 3'	5' tatggcataaaagggtggtccattc 3'	<u>CG1915</u>
GCM	5' caacggaaactaacggcgtccgag 3'	5' gttctcgccatcgttgagatctgc 3'	<u>CG12245</u>
nMDAR	5' ctgcgcatgttctcctggtgg 3'	5' cgtacatgaggttagacctgga 3'	<u>CG14793</u>

**Mouse Primers for RT-PCR**

Name of gene	5' sequence	3' sequence	Accession no.
SCP1	5' cggccgtcattactcagatcagcaagg 3'	5' gcagtgaacagcacacattcaagagct 3'	<u>AY028804</u>
GAPDH	5' tccaccacctgtgttgctgta 3'	5' accacagtcctatgccatcac 3'	<u>NM_008084</u>
ngn1	5' catctctgatctcgactgctccagcag 3'	5' gggtcagagagtgggtgatgccacagtg 3'	<u>NM_010896</u>
beta-tubulin	5' tgcctcacccaaggctctgacactgtgg 3'	5' ctgaaacagctcctggatggcagtgctg 3'	<u>NM_023716</u>
stra13	5' ctgtggccatggagggaacagtggcttcc 3'	5' agaagtccaggagcagctgaggagcac 3'	<u>NM_016665</u>
GAD1	5' gcaaccgcaggcacgactgttacggag 3'	5' agatgacctccggaagaagttggcctgt 3'	<u>NM_008077</u>
nrsf	5' ccctgcctgcgaacctcccaggtaga 3'	5' agccaactcagctggactctctccagcttc 3'	<u>NM_011263</u>

**Human Primers for ChIP assay**

Name of gene	5' sequence	3' sequence	Accession no.
GAD1 promoter chr2q31	5' tgcggtttatattatctgcacgccgggag 3'	5' caccggttcgagtcctccggagaggatgc 3'	<u>NT005403</u>
GAD1 3' gene chr2q31	5' ggagccctatgcagggttaagggaataa 3'	5' gggctttgattttggagccacctgtg 3'	<u>NT005403</u>
GRIN 2A promoter chr16	5' aactatttctgggtcactccttagacac 3'	5' gctgggaggaatgcttctaatgcattg 3'	<u>NT010393</u>
SCN2 promoter chr.2q23	5' ctggataagtactgaagagtgggctttgg 3'	5' cagacgacaagttacatgcaacatg 3'	<u>NT005403</u>

**A**

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SCP1/ML117 (chr2q35) 1100: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
SCP2/OS4 (chr12q13) 1100: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
SCP3/HTA22 (chr3q22) 1100: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
PCP1 1100: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV

SCP1/ML117 (chr2q35) 1136: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
SCP2/OS4 (chr12q13) 1136: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
SCP3/HTA22 (chr3q22) 1136: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
PCP1 1136: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV

SCP1/ML117 (chr2q35) 1184: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
SCP2/OS4 (chr12q13) 1184: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
SCP3/HTA22 (chr3q22) 1184: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV
PCP1 1184: 58K1CYVLDKDTLVHLEPKVTEAUF...118VHLEVYHGVVLEKHV

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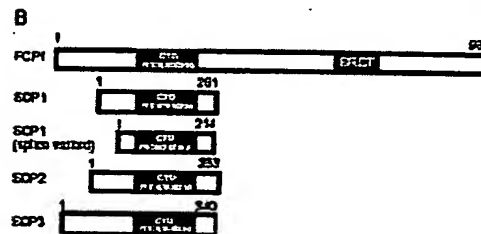


FIG. 1

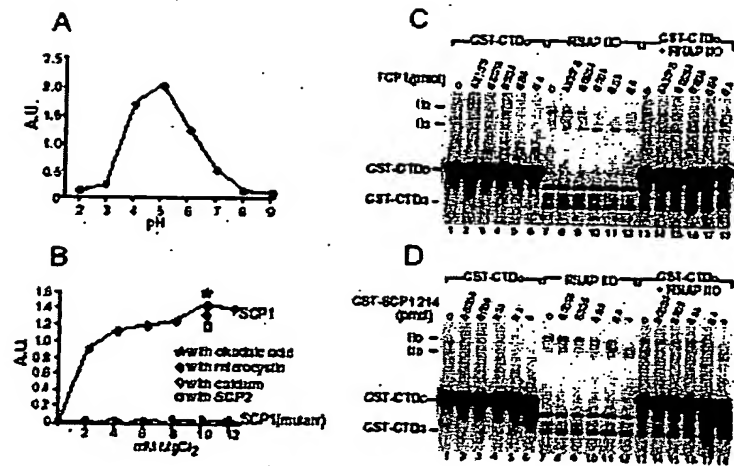


FIG. 2

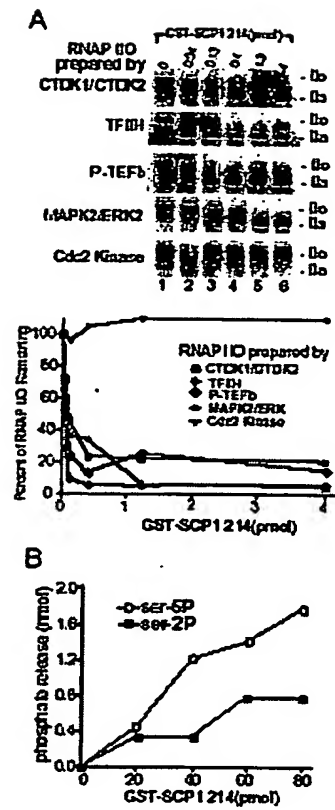


FIG. 3

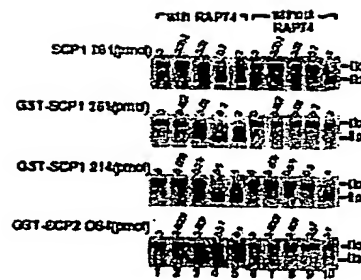
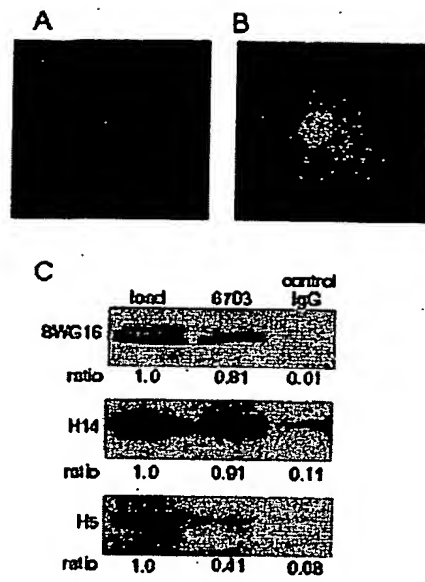


FIG. 4

**FIG. 5**

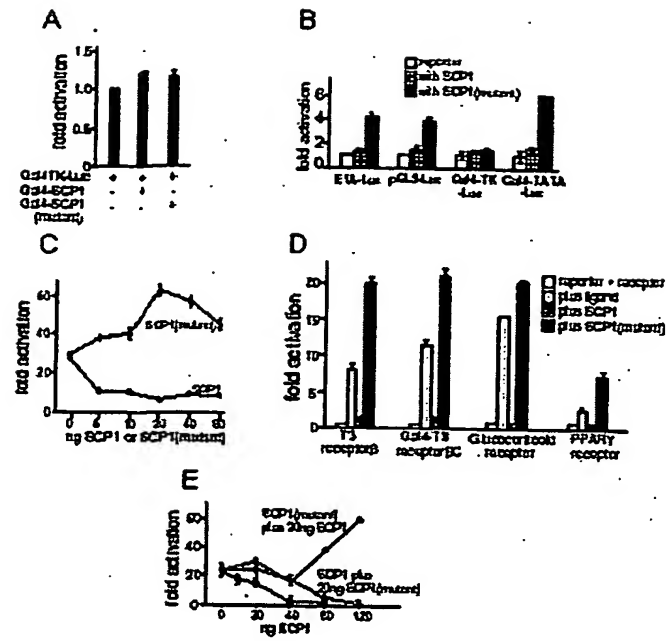


FIG. 6

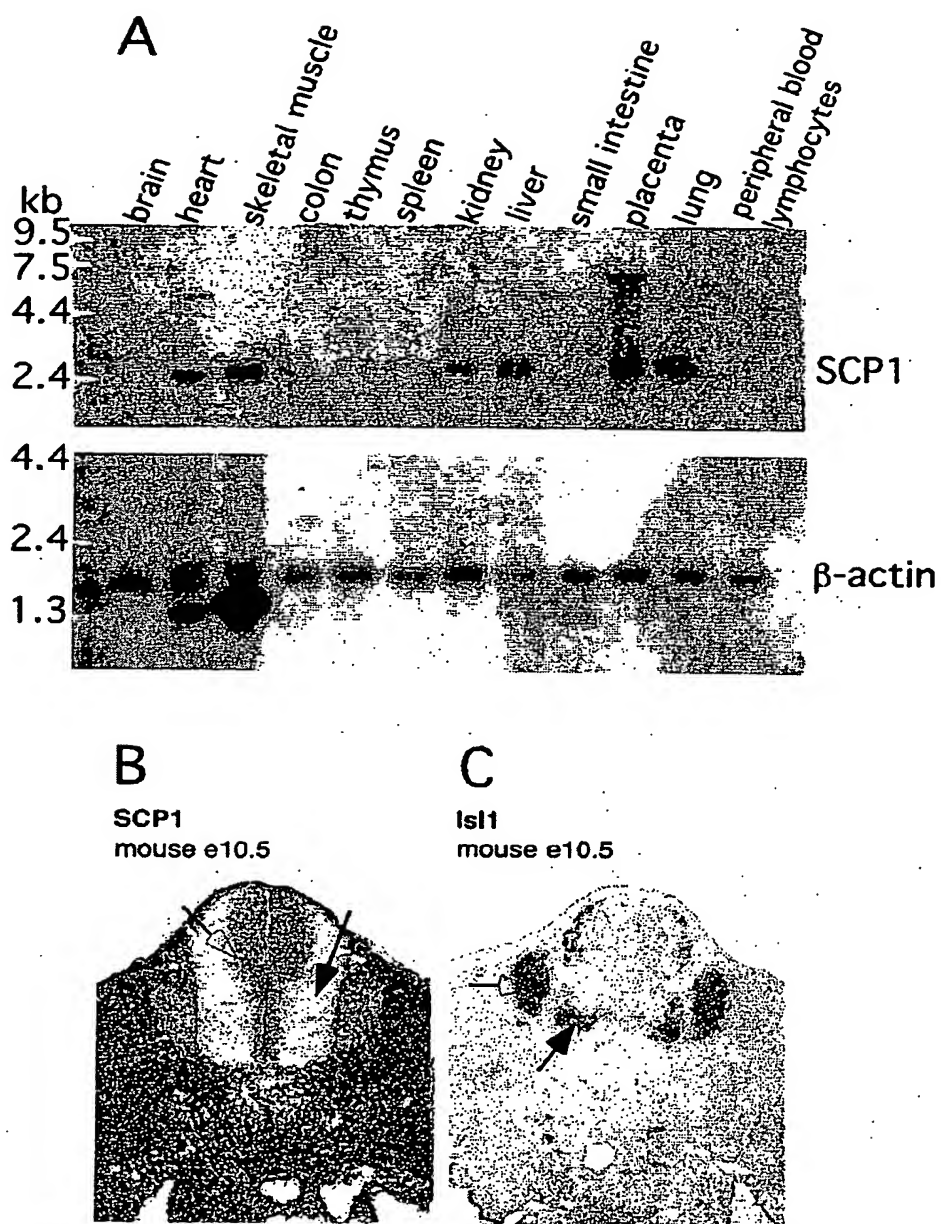


Figure 7



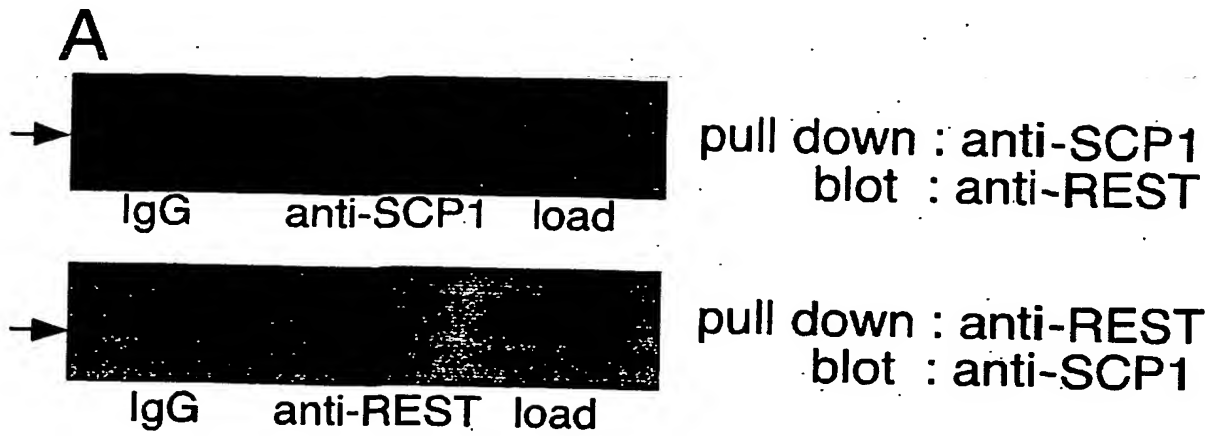
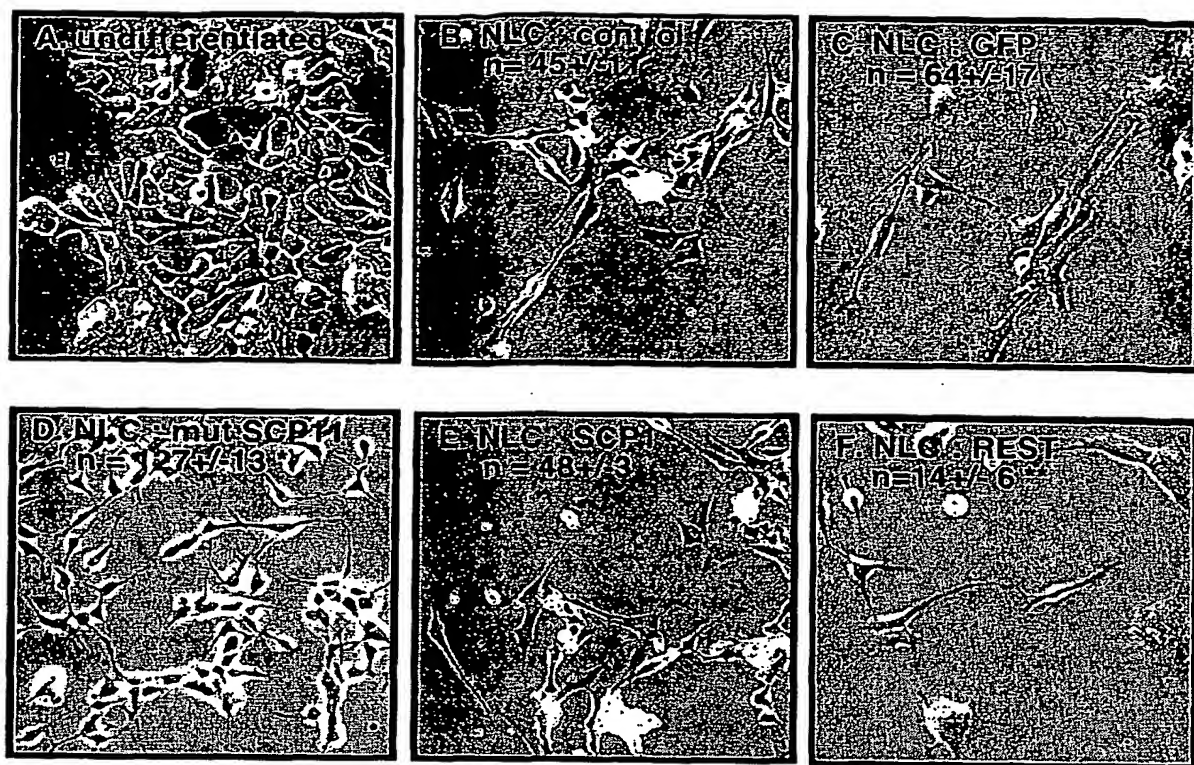
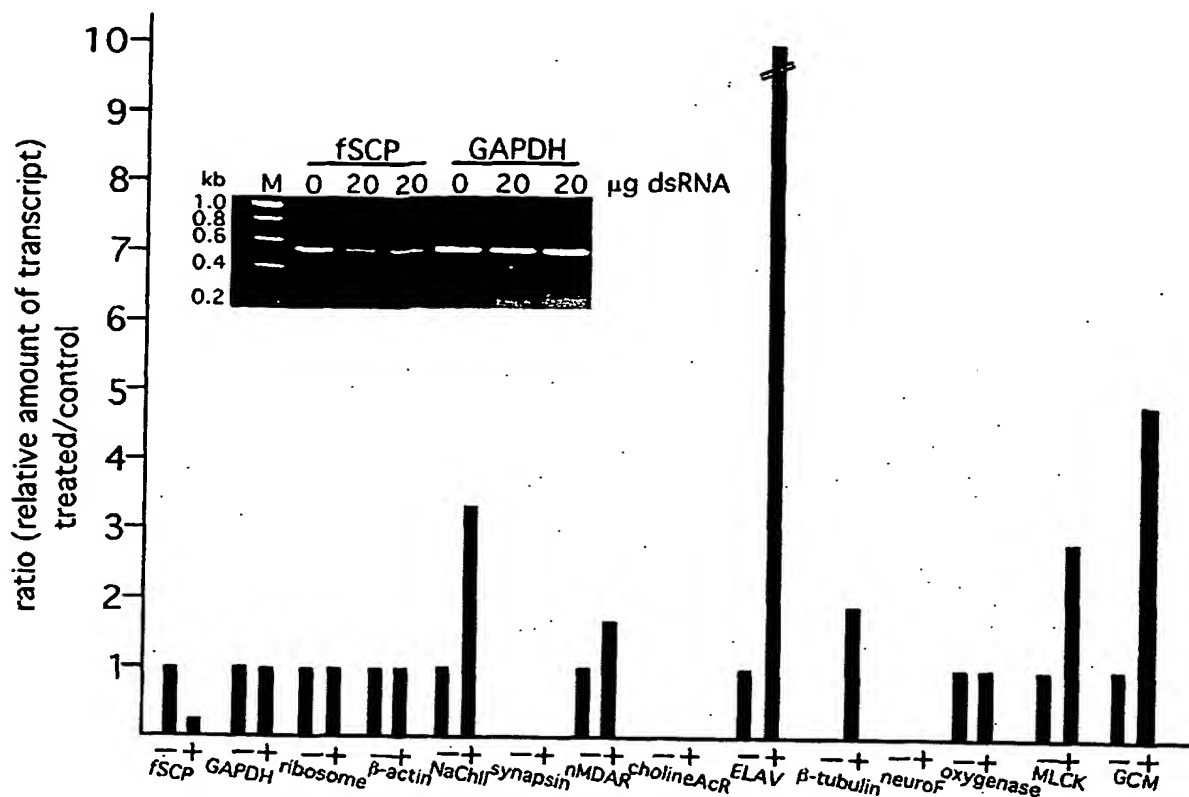


Figure 8



\*  $p = 0.001$  compared to wildtype  
\*\*  $p = 0.008$  compared to wildtype

Figure 9



gene		average Ct	std deviation
fSCP	control	21.1	0.18
fSCP	knockdown	23.3	0.22
GAPDH	control	17	0.1
GAPDH	knockdown	17	0.19
ribosome	control	25	0.14
ribosome	knockdown	25	0.15
$\beta$ -actin	control	15	0.1
$\beta$ -actin	knockdown	15	0.01
NaChll	control	25.1	0.22
NaChll	knockdown	23.8	0.2
synapsin	control	29.5	0.26
synapsin	knockdown	29.5	0.4
nMDAR	control	15.8	0.5
nMDAR	knockdown	15.1	0.16
cholineAcR	control	29.4	0.76
cholineAcR	knockdown	31.2	0.96
ELAV	control	26.8	0.19
ELAV	knockdown	22	0.69
$\beta$ -tubulin	control	27.9	0.67
$\beta$ -tubulin	knockdown	25.1	0.35
neuroF	control	30.2	0.83
neuroF	knockdown	30.1	0.55
oxygenase	control	23	0.46
oxygenase	knockdown	23	2.16
MLCK	control	17.8	0.21
MLCK	knockdown	16.5	0.68
GCM	control	23	0.42
GCM	knockdown	21	1.16

Figure 10